International Journal of Environment, Architecture, and Societies
Vol. 02, No. 02, Month 2022, pp. 109-121
ISSN: 2775-8540
DOI: 10.26418/ijeas.2022.2.02.109-121

Urban Tapestry

A Place-Sensitive Approach to Sustainable Urban Design

Noor Hasharina Hassan[1], Gabriel Yit Vui Yong[2)], Izni Azrein Noor Azalie[3)], Norzurianie Kamarulzaman[4)]

[1, 2), 3), 4)] Geography, Environment & Development Programme, Faculty of Arts & Social Sciences, Universiti Brunei Darussalam, Gadong, Brunei Darussalam

Manuscript received:
July 28, 2022

Manuscript revised:
August 29, 2022

Manuscript accepted:
August 30, 2022

Date of publication:
August 31, 2022.

Corresponding author:
Gabriel Yit Vui Yong
gabriel.yong@ubd.edu.bn

Abstract – Shophouses are essential elements of the urbanscape. However, the rate at which they are developed and neglected in Brunei has given rise to various problems in commercial areas, which undermines sustainability. While commercial areas are places with unique characteristics created as a consequence of the interaction between people and the environment, they tend to be inconspicuous to outsiders, including authorities and planners. This paper proposes a way to elucidate the genius loci of a site using urban tapestry as an analytical model rather than just a metaphor. The Menglait commercial area (MCA) was used as a case to illustrate this method. The MCA tapestry depicts a place for the common people to fix their automobile issues and quick social-business meet-ups. Its threads could be traced to the area's early development, interweaving national development programs with the introduction of the automobile, the Chinese diaspora, and the development of the oil industry. Traditionally, shophouses, which were functional and ecological in design, have become wasteful in their modern form due to changing urban realities. Concerning the MCA, its apparent decline could be revealed through the tapestry method. Planned rejuvenation of the area would have obliterated existing features, structures, and knowledge that have essential values to enhance its resilience as a commercial area. The utility of our tapestry method is in the conservation of the genius loci of an area when integrated into the standard urban planning process.

Keywords: *conservation, genius loci, shophouse, sustainability, urban tapestry*

I. INTRODUCTION.

Commercial spaces are part and parcel of the urbanscape across the planet. They are the economic engines of cities and have evolved from market-style trading, galleries, and department stores to 'big box' malls and, in recent decades, retailing in electronic media (Wrigley & Lowe, 2002; Bonfrer et al., 2022). The last two represent multinational capitalism (Hannigan, 2005: 183). In developing Southeast Asia, shophouses have dominated commercial areas since the 18th Century (Han & Beisi, 2016). Shophouses are so-called because the families of merchants reside above the retail spaces on the ground floor (Wagner, 2017). They are cultural expressions of the Chinese diaspora (Wong, 2021). However, the organization, design, construction and use of shophouses have evolved from multiple influences, notably from planning, regulation, and assimilation of other cultures (Fels, 1994; Han & Beisi, 2015; Han & Beisi, 2016; Wagner, 2017; Wong, 2021).

In Brunei Darussalam (for brevity, 'Brunei'), shophouses were first introduced by Chinese merchants when the urban center of the sultanate was in the Brunei estuary, now the historic Kampong

Ayer ('water village'). They were erected on a partially reclaimed island (known locally as a *bakut*) at Bakut Pekan Lama ('old town') (Hassan & Yong, 2019). When the 'city' was moved onto land under British administration, Chinese migrants set up shops in the new Brunei Town, renamed in 1970 as Bandar Seri Begawan (BSB), after the 28th Sultan. Shophouses have evolved because the proprietor family rarely resides in the space above the retail unit. However, the basic design of shophouses has not changed much, apart from the materials used. They remain rectangular, 2 to 4 floors, and are partitioned into smaller units. The ground floor is still the main retail space, while the first floor is sometimes used for retail, but more commonly as office space or various commercial services. The upper floors are still living quarters, but mainly for workers, not necessarily from the retail unit below.

Most shophouses are bare and basic in construction and design. This allows tenants to modify the unit to serve its purpose. Clusters of shophouses form shopping lots. This organization enhances commercial activity by concentrating exchanges in small areas, which promotes vibrancy. They are essential elements of the urban economy. However, in Brunei, the rate at which they are mushrooming all over the country, leaving behind underuse lots and units, is an unsustainable trend, as some become neglected with waning popularity and degrade into dilapidation, attracting illegal activities that give rise to social ills. This negative development is wasteful. It also promotes low-density sprawl and deforestation. Meanwhile, the unexceptional façade of modern shophouses renders conditions within them inconspicuous to outsiders (anyone who does not spend significant time within). Planners, authorities and potential investors are, therefore, often quite unaware of issues and problems, as well as the unique character of a place and people, which has value and leverage for commercial development (Fels, 1994). The policy and practice in rejuvenation projects are to tear down the old and rebuild a new structure, often with no connection to the existing place (e.g., Jacobs, 1961). Sustainable development entails conserving the environment (human and natural) and social justice for disadvantaged groups (World Commission on Environment and Development, 1987).

This paper will present a method of mapping that would elucidate the social-economic dynamics that produce the cultural-environmental imprints in an urban commercial area over time. The output is an urban tapestry. The paper will illustrate the production of an urban tapestry using the Menglait commercial area (MCA) in the Brunei-Muara District as a case (see Figure 1 for location). MCA lies within the Gadong Kiulap Action Area in the BSB Development Masterplan (HOK International, 2010). Shophouses here would be replaced by high-quality, higher density (4-8 floors) residential condominium units to cater to the potential population rise associated with economic growth envisaged in the masterplan. The mixed-use area comprises shops, education centers, and public and private offices. MCA has been an automobile services and parts centre since its emergence in the 1970s. Its place value will be obliterated, and people's lives will be impacted under the masterplan. The paper will discuss the utility and issues associated with using the urban tapestry method. It will conclude by highlighting its applicability to achieving sustainable development (World Commission on Environment and Development, 1987).

Fig. 1. Menglait Commercial Area embedded in 1972 Map of Gadong, Brunei Darussalam.

II. URBAN TAPESTRY: APPLICATION AND RELEVANCE

Several urban historical or social studies have employed tapestry as a metaphor and approach to capture and shed light on the human dimension of places (Kenny, 1962; Wolf, 1963; Freeman, 1987; Lane, 2003; Tucci et al., 2011). The approach renders intangible stories, processes, values, and cultural imprints visible in the land and urbanscape. The 'Spanish tapestry' of Kenny (1962) on the linkage between town and country in Castile is among the earliest work that used this approach. Freeman (1987) followed up on his work in her exploration of the structural discontinuities between villages and the capital city in Soria. Freeman (1987) noted how "anthropologists with differing concerns have explored the tapestry's texture, discerning threads of warp and weft, appreciating subtleties of color and their changes under changing lights" (p. 185). She traced the thread running from the countryside to a small city, the province's capital, where she and Kenny had begun their tapestry work in Spain. According to Freemen, a tapestry is "a fabric of intersections', unlike a mosaic of tiles, which, while isolated, are integrated. There is part of the capital in the countryside and vice-versa.

Another example is the work of Tucci et al. (2011) in their study of toponyms in Milan, Italy. They used the tapestry approach to examine how the social and political history and their contestations created the diversity and multi-layered ness of the city spatially and embedded in the names of places. They relate contrasting socio-economic functions and names given to the different places or streets throughout the different periods, from the Medieval to Roman and contemporary Milan. Their study reveals the influence of cultural politics in place-identity creations, a fundamental aspect often neglected in planning and understanding urban discourses across time and space. Using the collection of historical records and narratives, Tucci et al. (2011) created a digital database (Geographical Information System) of the different historical layers, making it possible to understand not only how the city develops but also how rule changes affect these places. The ability to observe such changes in the spatial patterns and urban fabric allows for creating an urban tapestry, visually observable through maps of the different historical periods.

Lane (2003) and Jungnickel (2004) used urban tapestry to describe their method of capturing people's sense of the city in the United Kingdom via wireless digital platforms. These are mapped organically from interaction among participants. Urban researchers, such as Jane Jacobs (1961) and Richard Florida (2005; 2008), emphasize the importance of people in place-making. Jacobs (1961) criticized city planners and architects for lacking appreciation of the *genius loci* of localities in the revitalization and large infrastructure projects, obliterating them by bulldozing. Cresswell (2015) echoed this sentiment, stating that architecture as a discipline tends to be oblivious to the fact that buildings are places themselves and central parts of more prominent places (p. 128). According to Norberg-Schulz (1985), viewing a location as a place requires recognition of its character and sharing the experience of its genius loci; to respect the place, finally, means adapting new buildings to this character (p. 63). A commercial area is more than a physical structure. It is a living entity comprising elements with the meaning ascribed by people (Hubbard, 2006). Places are produced through experiences, histories, languages, and thoughts, which could evoke memories and expectations in different visitors (Casey, 1996; Attwa et al., 2022). People's sense and memory of the place should be at the heart of sustainable urban planning (Tuan, 1974; Anderson, 2009).

The cultural landscape in Southeast Asia is a product of exchanges with multiple foreign agents through trade and colonialization. Europeans introduced urban planning and regulations, which, together with changing realities, such as family structure, commercial patterns, and values, shaped urban morphology, reflected in the evolution and variety of shophouses (Fels, 1994; Han & Beisi, 2016). Western colonists introduced more rigid policies and practices, organizing towns and commercial areas into grids and segregating the European part from the local cosmopolitan city (Han & Beisi, 2016). The arranging shophouses in commercial areas are therefore organized in an orderly manner along street sides. Including a *kaki lima* (walkway with a roof) is an adaptation to the tropical climate (ibid.). Commercial spaces were generally mixed-use but organized vertically. The ground floor was public space and shop front, while the upper floor was private, used for living, work or storage. The shophouse is designed for flexibility and adaptability, a sustainability trait that explains its establishment in the urban landscape (Han & Beisi, 2016).

Shophouses are built importation by the diasporic Nanyang Chinese. However, according to Wong (2021), shophouses in Sarawak and Sabah differ in design from those in peninsular Malaysia (p. 593). This also applies to shophouses in Brunei, where most Chinese immigrants were from Sarawak, Singapore, and Hongkong (Richter, 1999). The Chinese population grew rapidly between 1931 and 1947; by 1960, they accounted for a quarter of the Brunei population (Richter, 1999). Ethnic Chinese transformed the economic landscape from a water-based market known as *padian* (Ibrahim, 1970; Bakar, 2018) to shopping lots on land. The British played a pivotal role in the transition when they assumed administration between 1906 and 1959, excluding the brief period of Japanese occupation. In 1915, a bridle path from Brunei Town to Menglait opened the area to development (Yunos, 2009). However, organized development only began in the post-Second World War (WWII) years in the first National Development Plan (NDP, 1953-1958) (Yunos, 2008a). It began a modernization program, which included expanding and upgrading road networks, resettlement schemes, and construction of shophouses. In 1972, the Town and Country Planning (TCP) Order was enacted, and a British expatriate was appointed the first (Yunos, 2008a). The pace of urbanization has continued rapidly, effectively wiping out the pre-1950s cultural landscape. A tapestry approach may offer a way to recapture lost cultural knowledge, which could be of value in urban planning and design today (Fels, 1994).

III. METHODOLOGY

This paper aims to show the utility of employing the urban tapestry approach in urban planning and design to achieve outcomes that align with the concept and principle of sustainable development. It hopes to illustrate that this methodology elucidates essential details often missed and even ignored in urban planning and design. The MCA in Gadong, 3 km northwest of Brunei Town, the old CBD (central business district) of BSB, is used as a case due to its history, importance, and planned transformation (HOK International, 2010). The study involved mapping the shop blocks through a field survey and the data entered into a GIS. The dataset includes details of the shop name, operational status, shop front characteristics, unit condition, business type and specialization, and notable features. 'Stories' and 'common knowledge' of the place are derived from conversations with people who have

lived or worked in the area over the past 3-4 decades. Finally, most of the authors have personal or 'insider' knowledge of the place, having lived, studied, or worked in the area for a number of years. Secondary data in the form of maps, reports, and plans were also used. Their data were cross-referenced to reduce uncertainties.

The analytical process follows the way a tapestry is produced. Briefly, a tapestry is a fabric produced by weaving together threads, where color threads are inserted through (over and under) a fixed orthogonal set known as the warp or end. The warp threads run along the tapestry's length and are set in tension, while threads inserted to produce the pattern are referred to as the weft, woof, or fill. The final product is a fabric with a pattern, which could be a depiction of an event, place, idea, or symbol of an institution. An urban tapestry approach (Kenny, 1962; Freeman, 1987) to understanding a commercial area seeks to identify and trace the threads of human activity that gave rise to the complexity of a place over time. In this study, the natural environment is considered the warp, as it is the backdrop to human activity. Its similarity to the warp set is that the natural-physical environment is somewhat fixed, possesses particular characteristics, and is slightly elastic, i.e., able to accommodate some degree of manipulation. In ecology, this is known as the environment's carrying capacity. The weft is the interwoven threads to create a place's unique patterns and characteristics. They are interconnected and therefore influenced by external forces, such as development, globalization, and environmental changes.

The tapestry methodology aims to capture part of the complexity of patterns in a place, often glossed over or treated as homogenized in development planning and design. From this perspective, an urban renewal project, for example, would entail replacing the pattern in the existing tapestry (together with its meaning and stories). The only way this could be achieved would be to remove the existing threads (for example, by crushing the built structure and bulldozing away the rubble to create a clear space, a new empty patch in the canvas). While this would achieve the objectives of the planners, architects, and developers, it does harm existing relationships, particularly the small and marginal 'actors' that are nevertheless an essential component of the entire fabric.

IV. Results and Discussion

The characteristics of the Menglait commercial area are examined through spatial analysis and then the urban tapestry approach. The findings and implications are then discussed.

A. Spatial Analysis

The MCA is part of the larger Gadong commercial region, which extends 1 km further to the west. It has a small footprint of less than 25 ha. The MCA is bounded east by Sg Kedayan, the main river channel, which discharges into the Sg Brunei estuary at BSB. Sg Menglait, a tributary that joins Sg Kedayan at the southeast corner of the MCA, defines its southern extent. The flyover of the Hassanal Bolkiah Highway marks the western boundary. MCA is cut into two parts by Jalan Gadong, an essential dual carriageway that connects the area to BSB. The area south of Jalan Gadong (S-MCA) is the primary and older part of the MCA, accounting for 70% of its urban footprint. It stretches only 620 m along Jalan Gadong and extends 220-380 m south to the banks of Sg Menglait. In smaller northern section (N-MCA) stretches 400 m from east to west and extends just over 100 m northwards, except in the western third, where more recent development has resulted in shop blocks extending 320 m north to almost encircling the Kg Menglait residential area (formerly Kg Gadong, see Fig. 1). Older shophouses were smaller, comprising of 4-6 units. Newer, more 'modern' shophouses have 12-16 units. They are aligned more or less parallel to main roads and along a grid pattern of roads within the commercial area. Two petrol stations on either side of Jalan Gadong are essential anchors for the MCA, where the primary services are automobile-related.

There are 169 shops in S-MCA, with 125 occupying one unit while the others two units (25), three units (9), and three have 5, 6, and 7 units. There are nine units with no signage. Over half (54%) of the shops are old but made of concrete and steel, while 42% are somewhat modern-looking; only 5% could be described as 'new style' (boutique, themed, etc.). The MCA is the oldest commercial area in Brunei after Brunei Town, and it appears that over half have survived with little change, while some have been given a 'façade lift.' There are also new developments, notably at Gadong Central. Most shop units are three stories tall (51%) or two stories (20%). A smaller proportions are one (14%) or

four levels (15%). About 18% of shops or workshops are inactive, reflecting MCA's decline as a commercial area. In N-MCA, 15% of the 101 shops are inactive. Retail outlets, eateries, and workshops make up 28%, 15%, and 17%, respectively. The rest are services, encompassing salons, health and veterinary services, tailoring, trading, and building contractors. Commercial activities in N-MCA are more varied than in the south. Although there are automotive workshops, some cater to industrial support.

Figure 2 shows the spatial pattern of commercial activities at MCA. It is an organic cluster area for automobile service which eventually drew in complimentary services such as eateries and convenience stores as well as residential. According to Porter (1998), "clusters are geographic concentrations of interconnected companies and institutions in a particular field" (p. 78). However, a salient value-added characteristic of MCA workshops is the emphasis on building a strong bond with people, which is not evident in newer commercial and industrial areas. This is the distinctive feature of the Menglait workshops: supply what the 'common people' need at affordable prices. In contrast, car dealers, which are now located at various light industrial sites or otherwise, require customers to conform to their requirements. This includes tying them to their services program as part of the conditions of purchase, resulting in higher expenses for new owners over a few years, minimally. A common misconception by outsiders is that all Bruneians are wealthy. The majority (conservatively 60%) are in the lower income group and, therefore, often do not earn enough relative to the cost of living in the modern world. The average income of the population is Brunei Dollar 1,131 (Jabatan Perancangan dan Kemajuan Ekonomi, 2019). Therefore, most tend to seek out services offered by business establishments that provide products and services at more affordable prices. Menglait is still a leading option in car parts and services because of the cost and propensity to meet customers' specific needs. This characteristic is also true of non-automotive companies, such as Intracorp and Digital World, which offer a wide range of lower-price consumer electronics and frequent promotions.

As for eateries, besides the traditional coffee shops like Jing Chew and Tasanee, which offer low prices compared to cafes and branded fast floods, they provide local fare at low prices. Several new establishments, particularly in Gadong Central during the mid-2010s, cater to the younger generations. They encompass fast food (KFC) and boutique-type eateries with more regional offerings in stylized settings, such as *peranakan*, Taiwanese, Indonesian, or various fusions to cater to the Yuppies, Millennials, and Hipster consumer group. Other businesses, such as clinics, barber/salons, printing, and insurance, cater similarly to common people. In summary, Menglait is known for automotive services and coffee shops for quick meet-ups among colleagues, business discussions, and catching up among friends. A number of companies have withstood the test of time and have become reference points for the MCA. Their stories will be elaborated on in the next section on tapestry analysis.

Fig. 2. Spatial Pattern in the Menglait Commercial Area.

B. Menglait Tapestry

Analysis of the MCA using the tapestry method we propose begins with characterizing the warp threads, which in our model, represent natural processes and features that produce the physical environment. The cultural imprints are interwoven weft threads of human activity, encompassing planned and organic development, social interactions, economic and cultural exchanges, and effects of regional-global processes, particularly the rise of the oil industry and automobile, as well as the Chinese diaspora. The analysis involves identifying the individual strands that are part of the overall pattern, tracing their historical development through stories, and considering their interconnections to the future or implications of findings.

1) Warp Threads: Physical Environment

The MCA is located on the northern shore of Sg. Menglait, close to its confluence with the main channel of the Sg. Kedayan river basin. The latter, in turn, drains into the Sg Brunei estuary at Bandar Seri Begawan and the historic Kampong Ayer (water village), the capital of the nation-state of Brunei Darussalam and the center of the Brunei Sultanate, respectively. The physical landform at MCA is a valley, which has been drastically altered over the past 5-6 decades of development. Soil analysis by Hunting Technical Services (1969) in a study commissioned by the government on the country's land capacity corroborates the physical environment of a river valley: alluvial/recent riverine soil. The natural vegetation is predominantly tropical swamp and lowland dipterocarp forests. Mangroves line the banks, while mixed swamps occur further inland along the riparian zone. The estuary has a tidal range of less than 2.0 m (typically 1.0-1.5 m), but water levels have overtopped the banks during/after storm episodes.

Brunei is located in the climatic region classified as humid tropical, which is characterized by consistently high temperatures (monthly average 27C, low variability), high rainfall, and high humidity throughout the year. There is no distinct dry season, but late February-early March tends to be drier, while December-January is usually much wetter. In brief, the natural environment is susceptible to occasional flooding, which is exacerbated by urbanization. In the tapestry allegory, this backdrop upon which human stories are weaved together to produce distinctive patterns shares the same characteristics as warp threads, which have a degree of elasticity to accommodate modification to the physical environment (often referred to as its 'carrying capacity'). Similarly, the environment limits development and degree of improvement and, therefore, human activities and designs. Beyond the accommodative capacity, the outcome is regarded as environmental impacts, a broad term referring to undesirable changes in the physical environment.

2) Weft Threads: Human Stories

Five primary threads could be identified. They are: (a) development planning; (b) road infrastructure; (c) automobile; (d) Chinese migrants; and (e) economic globalisation.

Before the British's arrival, the Brunei Sultanate's populace was concentrated in a dense city complex built over the water in the Sg Brunei, part of which still exists as the present-day Kampong Ayer. The land was mostly covered with pristine rainforests and swamps. As in other areas colonized by the Europeans, development and urban planning were introduced in the region, in the case of Brunei, by the British (Yunos, 2008b). Since the first British Resident in 1905, the government sought to systematically transform Brunei culturally and physically into a modern nation-state after its image. A resettlement program was launched to disperse the population from Kampong Ayer and develop a land-based economy. Rubber estates soon displaced large swaths of forest on the valley slopes, including the Menglait area. The British established modern government structures and practices and built modern infrastructure and services, such as education, hospitals, and power plant towns.

The British began constructing roads in 1906. Before this, natural channels (streams, rivers, and estuaries) were the primary transportation highways. The first road cut through the Menglait area was a bridle path in 1918 to facilitate the development of a rubber estate (Yunos, 2009). Road metalling began in 1926, and by 1930, a metalled road connecting the Menglait to Brunei Town (renamed in 1970 as Bandar Seri Begawan (Ibrahim, 1971) had been built. This was a collaboration between the government and estate owners (Yunos, 2009). A 1962 map published by the Directorate of Overseas Surveys (Sheet 4/114/4, Series T735, Brunei Town) affirms that a 2-way, all-weather, bound surface road connection existed between Menglait and Brunei Town. Beyond 1 km westward, a single lane, the loose surface road leads west and then north to the Gadong Estate and Kg Gadong. The primary

land use was as rubber estate. However, a decade later, the 1972 map (Sheet 4/114/4, Surveyor General, Brunei Government) shows much of the MCA has replaced the rubber estates, which had been reduced to a small area of about 6 ha, adjacent to Kg Gadong (refer to Figure 1). The village appeared to have moved over 2 km southeast towards MCA. Shophouses at MCA appeared to have been established in the intervening period, undoubtedly facilitated by the first NDP and rising oil prices.

Under the first NDP, the Jalan Gadong project was completed in 1968 (Yunos, 2006). It was (and still is) the main road in a modern transport network built for the automobile. With the introduction of the automobile, this development led to a more prominent feature in the tapestry. It defined the MCA as the area for 'auto' (short for the automobile) parts and services. According to the Brunei Land Transport Department (LTD), the first vehicles in the country were registered in 1926. However, the number of private cars only became the primary mode of transport during the economic 'boom' years after WW2. In 1950, there were only 1,500 vehicles in the country, of which only 15% were found in the Brunei-Muara District. Most vehicular uses were in the Belait District, where the oil industry is located (LTD, n.d.). Vehicle ownership, however, leaped 5-folds to 7,992 within one decade. In 1962, the LTD head office was established in the Capital, Brunei Town. It was then moved to km 5 along Jalan Gadong in 1969 before settling in its present location 1 km further along Jalan Gadong. By 2013, there were 130,503 registered vehicles, 91.9% of which were private cars (LTD, 2015). The relationship between people and the automobile, which began in the 1960s, is a deep and lasting one, particularly in the Brunei -Muara District. Gadong, specifically MCA, was the center of its early development and has remained a key center for automotive services, even though development has dispersed them throughout the district and country. The Menglait area was the place to go for anything to do with the automobile: from purchases to repairs and parts.

The automobile story is also interwoven with the Chinese diaspora, or more accurately, the movement of Chinese migrants in the region. The improvement of Jalan Gadong for vehicular use and its proximity to Brunei Town led to the establishment of shops that cater to the needs of the automobile owner, and increasingly, they have become more desirable and affordable due to wealth from oil and gas. Shops were mainly operated by Chinese migrants and merchants who came to Brunei from Hong Kong, Taiwan, or the region (notably, Sarawak and Singapore) in the hopes of creating a new life for themselves and their family lines. Migrants invariably work in any available field. There is a familiar story among the founders of companies that operate in MCA. After a period of hard work, doing anything they could find, they eventually secured their small plot of land or shop to cater to the main demands of the local population. Sing Hiap Hin is an example of the Chinese migrant story. The founder, Mr Lee Ah Eng, arrived in Brunei with only a suitcase of some clothes. After years of working for a bicycle shop, he managed to set up his shop, renting and servicing bicycles (Sing Hiap Hin homepage). Cycling was the primary mode of land transport under the development program created by the British administration. It inevitably transitioned to automobiles in tandem with the rise of oil and gas as the leading energy fuel and the global concomitant growth and development of the automobile industry. This profoundly affects Brunei because of its oil and gas resources. The automobile thread is inextricably intertwined with economic globalization and the oil industry's rise to become the predominant energy sector.

Sing Hiap Hin is an established company that has expanded into chemicals, fire protection, machinery, and hand/power tools. It has several branches and workshops in the MCA and the Gadong region, of which some of the properties were bought over by the business rather than rented. It has also expanded its auto parts and services to European models. Some other migrant entrepreneurs also had similar success and ventured into other businesses or locations. The development pattern at MCA was characterized by auto parts stores and workshops displacing rubber estates in the 1960s in the area between the Sg Kedayan river and the central part (often referred to as 'Gadong Central'), as evident in the 1972 topographic map. The main commercial activity was supplying the needs of automobile owners, which is chiefly the replacement of faulty parts, periodic servicing to maintain the functional integrity of the vehicle, and repair works. Different stores eventually mushroomed, specializing in different parts of the automobile, such as tires, exhaust pipe, bodywork and painting, and lubricants. Those are offering auto parts catered to the increasing range of models as more brands entered Brunei. The exact process occurred with the workshops.

During the economic boom years between the 1970s to 1990s, the business thrived at MCA. New shophouses and workshops were added to the western part next to the flyover of the Hassanal Bolkiah Highway; this area was popularly referred to as "*bawah jambatan*" ('below the bridge'). As society became more affluent, automobile ownership became an essential part of a person's possessions, and acquiring a driving license is part of a young person's coming-of-age journey. The importance of automobiles is that many employers prefer applicants with driving licenses. The commercial area became denser and more complex as retail shops that cater to a broader range of needs entered the fray. MCA's growth was partly guided by the government's development program in the 1970s, which provided staff houses for its officers in the Kg Gadong area (now called Menglait), most of whom served in the vicinity of Brunei Town. Besides Chinese migrants, local Malay landowners also played a major role in shaping the commercial landscape of MCA and the country, as some became major developers engaged in a wide range of enterprises. Eateries, or 'coffee shops' ("*kedai kopi*" in Malay, "*kopitiam*" in Chinese) was the natural complement to automotive services, providing refreshments to clientele and workers alike. Several of these shops, such as Chop Jing Chew (Chinese) and Sri Kitani (Malay), have become iconic in the area, having survived half a century and served 2-3 generations of clientele. The established businesses grew, some of which became household names and boasted several branches, where owners of private land, a legacy of the British administration system.

In summary, the MCA urban tapestry could be traced to 5 main threads associated with national development, infrastructure, the automobile, Chinese migrants, and the national-global economy. These are independent developments that intersected at Menglait in the post-WW2 period. The pattern is evolving with ongoing changes in the country and the world. Gadong Autoparts, popular in the 1990s, is representative of the auto businesses at MCA. Like many businesses here, it offers an extensive range of auto parts. However, it also provides electronic diagnostic services for various vehicle models to cater to the increasing requirement at an affordable cost, as more models have electronic control systems and sensors. This is the distinctive feature of the Menglait shops: supply what the 'common people' need. This is encapsulated in Gadong Motors' "about us" statement on their website, where they stated that their "small and energetic team will happily take the extra steps to help [the customer]." They also claimed that they would happily acquire the parts required should they not have them in stock.

C. Discussion

The preceding section illustrated the urban tapestry method we developed to identify the multiple strains of development and activities that produced the present characteristics and landscape of the MCA (refer to Figure 3). However, what are its utility and value? How would the findings contribute to development planning and design or sustainable development of the MCA or urban area? The discussion will focus on three main parts: (i) interconnections, (ii) sustainability, and (iii) implications of findings on MCA and urban planning and design in general.

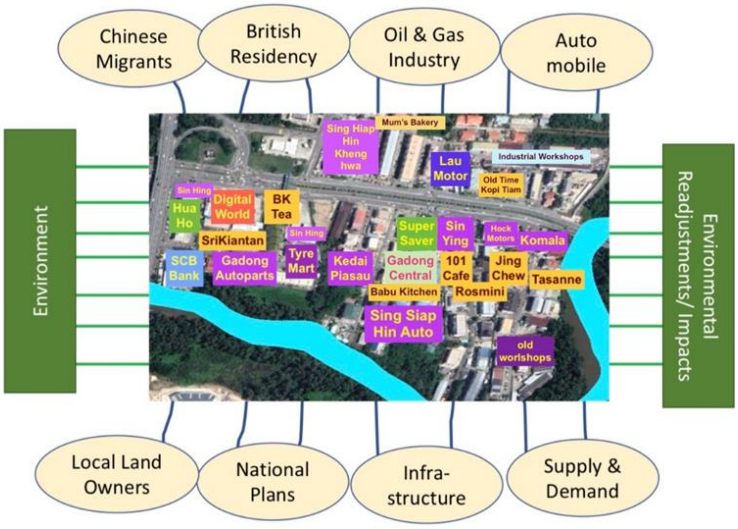

Fig.3. Iconic Businesses in the MCA Tapestry.

1) Interconnections

The salient feature of the urban tapestry method is tracing interconnections to processes and their causes, which are often not readily obvious. Information on interconnections among elements (owners, businesses, customers, etc.) is relevant and valuable in planning, design, and policy-making. Typically, such details are not considered because of the common practice of clearing space for development. In Brunei, strip-clearing of natural vegetation and obliteration of existing built structures is still practiced despite the adoption of sustainable development in TCP. This practice will invariably have an impact on the natural and social-cultural environment.

Information adds value to whatever is being examined or slated for development. The tapestry analysis elucidates an essential linkage between the existing community and place. It is not dissimilar to the citizen value profiling of Stolp (Stolp et al., 2002; Stolp, 2006), developed to assess the impact of the development project on people. The method provides a human dimension to environmental impact assessment (EIA) and brings intangible human values to light (Fels, 1994). In development planning and design, the area to be developed, re-developed, or revitalized is often treated as a blank canvas upon which new structures are installed, hence, the practice of site clearance. Designs are often based on abstract concepts with little consideration for existing culture and history. Decisions on options are then made by authorities and firms mainly based on economic and development agendas. The features and places obliterated, insignificant in the views of planners and architects unfamiliar with their place value and uniqueness, are essential to certain people (residents, workers, frequent visitors, etc.) The affected community, generally the lower income/status, moves on to find another livelihood or place to settle. In the concept of sustainable development, this is regarded as social injustice, i.e., inequitable development.

2) Sustainability

The tapestry model we propose relates human activities to the natural environment, a major concern in sustainable development. In the MCA, a field survey found the surrounding area unkept at the corners, with abandoned, dilapidated vehicles left at several locations and sections of roads potholed. As highlighted in the spatial analysis section, several units in shophouses or workshops in the MCA have become inactive, while some new ones have remained vacant. This reflects the waning popularity of the area, even though it is still the main area for auto services and parts to many local citizens. In many shop lots in Brunei, owners provide general maintenance services (essentially, trash collection) for a nominal fee to tenants. In the MCA, some shophouses are properties of owners of large land lots who have become significant developers. They generally provide maintenance services. The physical environment at MCA has improved over the past 1-2 decades. However, degrading structures, including road accessways, are found in various sections, particularly close to the edges of the complex. The banks of Sg Menglait also suffer from severe erosion due to storm discharge, the consequence of urbanization in the area beyond MCA. Business owners and operators do not appear to pay attention to the environment, which is not landscaped, and natural vegetation has been pushed to the margins.

The tapestry method could be used in citizen value profiling and assessment introduced by Stolp above to enhance impact assessments associated with urban development. This is akin to conducting an environmental and social impact assessment (ESIA) by planners and architects, which is essential for sustainable development because urban projects, particularly small-scale organic ones, are usually exempted from EIA. Understanding the interconnections with the natural environment, particularly processes, could be more helpful. This importance is heightened in light of the current climate crisis (Yong, 2022).

3) Implication of the Menglait Commercial Area

In the BSB development masterplan, the MCA is part of the Gadong-Kiulap Commercial-Lifestyle area. This specific site would be replaced by a high-density residential area, exceptionally high-quality housing such as condominiums, a commercial boulevard, and a retail street. This is typical of urban planning, predominantly urban renewal programs that try to improve places by attracting higher-end functions, activities, and residents for economic growth without considering the people whose livelihood depends on the specific location. Although the masterplan involved extensive consultation with stakeholders, it described the place (buildings) as being of no heritage value. Furthermore, if the plan were implemented, improvement to infrastructure, facilities, and services

would only serve 'outsiders' of higher income or class, displacing those who have lived in and depended on the place.

The tapestry mapping method would highlight these salient features and stories that explain why people continue to visit certain places. They bind people and places. The community that remains or is sustained are shops that cater to specific needs of people from various backgrounds but more so the common people looking for affordable means to service their automobiles despite the modernity and computerization of automobiles. Intergenerational clientele created due to low cost and personal touch and extra effort given by the workers and shop owners have strengthened loyalty and relationships between service providers and customers. In addition, being in a cluster of automobile workshops and auto parts dealers for many years has benefits, including economies of scale and close network discounts. These webs of social relations help reduce unnecessary expenditures. A close-knit community within a short (walkable) distance is also ecological in design (Yong, 2022), lessening the waste of resources and time for sellers and buyers. This is the genius loci of Menglait. Historically, it has been shown that urban renewal programs for urban vibrancy can lead to marginalization and displacement of people (refer to Jacobs, 1961), which deviates from the concept of sustainability. In places such as Malacca, traditional shophouses are celebrated and conserved through tourism as part of the memorial landscape. This paper highlights the social-cultural environment using the tapestry approach that is vital to be included in urban planning for a more inclusive and sustainable BSB in 2035.

V. CONCLUSION

The paper introduced a variation of the urban tapestry approach used in several studies. It employs tapestry as an analytical model rather than merely a metaphor. The MCA case study illustrated how the different threads of historical development gave rise to the cultural imprint in this commercial urban scape. It elucidated details in the human dimension of an area slated for urban rejuvenation, which would not be readily acquired through community consultation in the standard planning process. The urban tapestry method that we propose has two parts.

1. The natural-physical environment, comprising landform, soil, water features, natural vegetation, and the ecosystem, is treated as a set of warp threads, which are in tension and able to accommodate a certain degree of manipulation by human activities.
2. The character of the place is synthesized from other historic development and human stories, like the colored weft threads that produce the patterns in the tapestry.

The MCA urban tapestry depicts a place for servicing automobiles and finding specific car parts, as well as for quick meet-ups with colleagues, friends, and business transactions, among the common people. Its threads began with the area's early development, the introduction of modern TCP, the national development program interwoven with the introduction of the automobile, the Chinese diaspora, the development of the oil-based industry, and the post-WW2 economic boom. The traditional shophouses, which were functional and ecological in design, have since evolved into larger structures, which are more flexible functionally but wasteful ecologically. The current approach would help elucidate these aspects, allowing for designs that capture the good parts of the site and conserve important functional and ecological linkages that have allowed the community to thrive. The current decline is that MCA is misunderstood without details captured in its tapestry, and its rejuvenation based on the BSB development masterplan would obliterate existing features, structures, and knowledge with important sustainability values. Our urban tapestry method would help conserve human and environmental elements when integrated into the standard urban planning process.

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